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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/541,641

07/07/2005

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3459

270 7590 11/10/2008
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EXAMINER

KESSLER, CHRISTOPHER S

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

11/10/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/541,641	Applicant(s) TADA ET AL.	
	Examiner CHRISTOPHER KESSLER	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 15-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2, 15, 19-21 and 25 is/are allowed.
- 6) ☒ Claim(s) 1, 3, 16-18, 22-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of Claims

1. Responsive to the amendment filed 21 July 2008, claims 1-3, 15, 18, 22, and 25 are amended. Claims 1-3, 15-25 are currently under examination.

Status of Previous Rejections

2. Responsive to the amendment filed 21 July 2008, new ground of rejection are presented.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 22 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 22 recites the limitation "the cylindrical mold." There is insufficient antecedent basis for this limitation in the claim. For example, claim 3 describes that the mold has an uneven molding space cross section, but not that it is cylindrical.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 3, 16-18, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 3,670,137 issued to Inoue (hereinafter "Inoue").

Regarding claim 1, Inoue teaches the invention substantially as claimed. Inoue teaches a method of forming electrically conductive metal powders using spark sintering (see abstract, col. 1). In general, Inoue teaches that it is desirable to use conductors (electrodes) in selective places of an uneven molding space in order to effect desirable sintering and densification (see cols. 2-4, Figs. 5 & 6).

More specifically, Inoue teaches a method of continuously forming metal rod from powder by spark sintering (see EXAMPLE VII and Figs. 23-25). Inoue teaches wherein direct current is used and pressure is applied to the powder (see EXAMPLE VII and Figs. 23-25). Inoue teaches that the method includes a cylindrical die set having a rod-shaped molding space (see Fig 23). Inoue teaches that the rod being formed acts as an electrode (see EXAMPLE VII, Fig. 25), meeting the limitation of arranging an electrode at the periphery side wall of the die. Inoue teaches that the rod is internally sparked by application of current in the mold (see EXAMPLE VII and Figs. 23-25), meeting the limitation of heating and sintering the sintering subject in the rod shaped molding space by energizing the electrode. Inoue teaches that the rod is pressurized from an end of the mold (see Fig, 25) and that the rod is moved relative to the mold (see EXAMPLE VII and Figs. 23-25), meeting the limitation of moving the electrode relative to the mold in a lengthwise direction. Inoue teaches that the powder material is

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continuously sparked and heated in the mold from one end to the other end (see EXAMPLE VII and Figs. 23-25). Inoue does not teach wherein the molding temperature is precisely controlled at each position of the electrode relative to the mold. However, Inoue teaches that the current is carefully controlled to prevent undesirable preheating and provide a more even material density (see cols. 2-3). Thus the temperature would have been controlled precisely. It would have been obvious to one of ordinary skill in the art to have controlled current (thus controlling temperature) in order to prevent undesirable preheating and provide a more even material density.

Regarding claim 3, Inoue is applied to the claim as stated above. Inoue teaches wherein the mold has an uneven cross section along its length and wherein the sintering material has an uneven cross section across its length (see EXAMPLE VII and Figs. 23-25). Inoue teaches wherein the rod is magnetically aligned at a separate location (see EXAMPLE VII and Figs. 23-25), Meeting the limitation of moving the electrode relative to the mold in a lengthwise direction to a plurality of positions setting a plurality of heating areas.

Regarding claim 16, Inoue teaches wherein the powder is pressurized from both ends of the mold (see EXAMPLE VII and Figs. 23-25).

Regarding claim 17, Inoue teaches wherein the material is sintered as it passes through the mold, meeting the limitation of one direction (see EXAMPLE VII and Figs. 23-25).

Regarding claim 18, Inoue teaches wherein the material is sintered to form an elongated rod-shaped sintered body (see EXAMPLE VII and Figs. 23-25).

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Regarding claim 23, Inoue teaches wherein the powder is pressurized from both ends of the mold (see EXAMPLE VII and Figs. 23-25).

Regarding claim 24, Inoue teaches wherein the material is sintered as it passes through the mold, meeting the limitation of one direction (see EXAMPLE VII and Figs. 23-25).

Allowable Subject Matter

6. Claims 2, 15, 19-21 and 25 are allowed. The prior art does not teach affixing an electrode connection terminal assembly to a periphery of a side wall of the mold and moving the assembly on a single axis along the length of the cylindrical mold to effect sintering as claimed. The prior art does not teach the limitation of claim 25, forming an elongate sintered body having an uneven cross section by a method according to claim 3.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER KESSLER whose telephone number is (571)272-6510. The examiner can normally be reached on Mon-Fri, 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roy King/
Supervisory Patent Examiner, Art
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